

NOVEL METHOD AND COMPOSITION FOR INHIBITION OF ANGIOGENESIS AND TUMOR GROWTH USING COMPOUNDS BASED ON A SEQUENCE WITHIN MMP-2**ABSTRACT**

The present invention provides methods and compositions for inhibiting angiogenesis, tumor growth and treating disease states using a peptide that contains a specific amino acid sequence of matrix metalloproteinase 2 (MMP-2). In one embodiment, the invention provides a peptide, which comprises the amino acid sequence Ile-Phe-Ala-Gly-Asp-Lys-Phe-Trp-Arg, preferably flanked by cysteine residues at the amino and carboxy termini. Additionally, the invention provides compositions for inhibiting angiogenesis or tumor growth or for treating disease states comprising organic and non-peptidic mimetics based on the above amino acid sequence as well as optimized sequences flanking the region of MMP-2 within which the sequence lies. Also provided are methods for detecting angiogenesis, tumorous tissue, metastases, and tumor invasion into a tissue by contacting a composition of the invention with a tissue and methods for screening compositions of the invention.